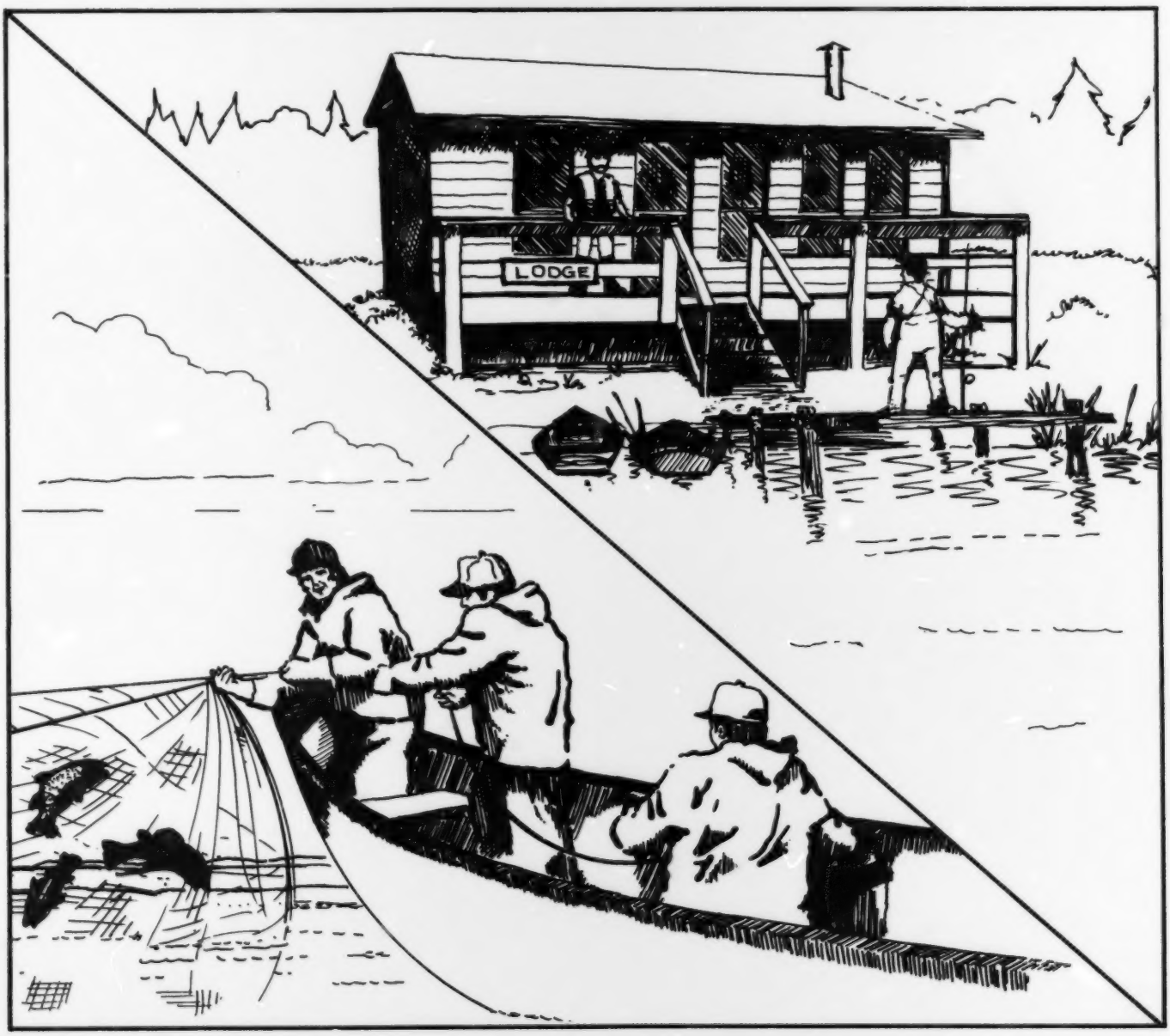
Saskatchewan
Parks and
Renewable
Resources

Hon. Colin Maxwell
Minister

Conservation Options For The Commercial Users of The Fish Resource:

A Discussion Paper

October, 1985



Minister's Message

Honourable Colin Maxwell, Minister, Parks and Renewable Resources

Saskatchewan's fish resource is valuable. It provides jobs and income to outfitters and commercial fishermen, is a source of food and yields untold hours of enjoyment and recreation to anglers of all ages.

The resource is facing difficult times. Declining supplies of fish and growing demands from various users are issues which must be addressed if the benefits the resource confers are to be available in years to come.

Management and conservation of the fish resource is a public trust and input from the public is required to ensure the decisions made reflect both the needs and wishes of the people of Saskatchewan.

The material in this document is for public review and discussion. I invite you to offer your comments and perspectives. They will be used in the development of a conservation framework for the commercial users of the fish resource.

Please send your comments before December 1985 to:

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Introduction

Saskatchewan's fisheries are in a critical situation. They are an important contributor to the recreation, tourism and renewable resource sectors of the provincial economy, but the current and projected utilization of this resource cannot be supported by the available supply. Stocks of walleye in some lakes of the Churchill River basin and stocks of lake trout in some lakes of the Mackenzie River basin are being overharvested. These resources require increased management and conservation.

All users of the fish resource are affected by overharvesting but those who depend on it for their livelihood are most affected. The principal commercial users in the Churchill and Mackenzie River basins are net fishermen and lodge owners. Both utilize the same resource in the same lakes, often at the same time. Both use the resource commercially: commercial fishermen sell the fish they catch; outfitters sell fishing services to anglers.

The Saskatchewan Fisheries Policy — Action Plan recognizes that benefits can be maximized through multiple use whereby commercial and recreational interests are allowed to utilize the resource providing both interests can be sustained. This Discussion Paper describes options required to achieve the benefits sought by the Action Plan. It is being circulated to elicit comment on the proposals it contains. Which options are preferred? Why? Should other options be considered? What are they? How should the commercial users of the resource be managed? Why? Please take time to review the paper and send us your comments.

The Saskatchewan Fisheries Policy — Action Plan recognized two key issues, supply—demand imbalance and allocation conflicts, as requiring urgent attention and resolution. The supply—demand imbalance is mainly caused by overcapacity. Exceeding the limits, using illegal fishing gear and overlapping preferences for certain species of fish are also factors. In addition, some spawning and nursery areas have been lost and lakes rendered unsuitable for fish life through land use practices.

Resolution of problems created by supply—demand imbalance can be achieved through enhancement and conservation. To improve fish supplies a program of enhancement commenced in 1984 with the establishment of the Fish and Wildlife Development Fund. Projects include rearing ponds, lake aeration, fishways, and lake rehabilitation. Twelve projects were initiated in 1984; additional projects are proposed for 1985 and following years.

The main thrusts of conservation are to reduce harvests of fish, to control illegal fishing activities and to restore the health of fish stocks. The program has two aspects, one for anglers and the other for the commercial users of the resource. The Sport Fish Conservation Program was implemented in May 1985 following the release of a conservation options discussion paper in April 1984. The Program changed management zones, seasons and limits to protect game fish while providing the widest possible range of recreational and economic benefits from the resource.

This Discussion Paper deals with the commercial users of the resource and emphasizes those conservation activities which will make harvests commensurate with supplies and protect the resource. The major impact of this program will be in northern Saskatchewan because this is where the greatest commercial use of the fish resource occurs. Most of the issues in this paper deal with commercial fishing. Although outfitters were affected by the impact of the Sport Fish Conservation Program, they are also included in this paper because they requested a review of the policy controlling their access to the resource. It is planned to implement selected options in 1986 following receipt of comments and discussion of issues with the users.

The issue of allocation remains. Allocation deals with sharing the available resource among the users and is a means of resolving conflicts. Many conservation and allocation problems are intertwined and result from multiple use of the fish resource. Problems relating to conserving and protecting the resource have been addressed by the Sport Fish Conservation Program and in this Discussion Paper. Problems relating to conflicts, tenure, licences, small lakes, sharing the resource, and open access will be addressed in the next Discussion Paper in this series, planned for 1986.

History of Commercial Use of the Fishery in Saskatchewan

The commercial net fishery is one of Saskatchewan's oldest industries. Commercial fishing probably began more than 200 years ago with the advent of the fur traders, the establishment of trading posts, and the introduction of gill nets. The first recorded commercial fisheries are from Last Mountain and the Qu'Appelle Lakes during the winter of 1885-86 when 155,000 lb of whitefish, walleye, pike and ciscoes were landed and sold locally. By 1888, shipments of whitefish and lake trout were being made to the United States.

Commercial fishing expanded greatly during and after the First World War. Dore Lake was an important producer in 1915. Fishing commenced on Lake Athabasca in 1920 and on Lac la Ronge in 1921. Fishing declined during the 1930's and expanded again following the Second World War. Commercial harvests peaked in 1962-63 when 15 million lb of fish were landed and have decreased rather steadily since to 6.2 million lb in 1983-84.

The industry has had its share of problems. In 1910 the Dominion Government appointed a Commission to examine the fisheries in Saskatchewan and Alberta. Many of the problems identified are current today (e.g., proper handling of fish, licences, seasons and mesh sizes). In 1946, a provincial Royal Commission also noted the similarity of problems between 1910 and 1946 and concluded that little effort had been made to guide the industry along sound economic or scientific lines, and that the contribution of commercial fishing to the social and economic life of the province had been underestimated.

The nature of the fishery began to change during the 1950's. In southern Saskatchewan, the fishery was restricted to whitefish, cisco and rough fish, the latter initially as a means of controlling carp in the Qu'Appelle Lakes. Gamefish harvests are now limited and strictly controlled. In northern Saskatchewan, the harvest includes whitefish and game fish. Whitefish were predominant in the 1950's and 1960's but became less important in the 1970's. The reasons are associated with increased consumer demand and better prices for game fish as well as with the presence of cysts in whitefish flesh which makes the product from some lakes unacceptable without additional costly processing.

Because costs of transporting fish represent a major expense for northern fishermen, the Province instituted a program in 1976 to pay 90% of the costs of transporting fish from the lakes where they were caught to Prince Albert. The approximate annual expenditures for this program have been about $500,000.

In southern Saskatchewan commercial fishing on most lakes is confined to a short period in the autumn. In northern Saskatchewan, fishing extends throughout the year ceasing only during freeze-up and break-up. Northern fishermen depend on the fisheries as a primary source of income in an area where few alternate employment opportunities exist, whereas southern fishermen utilize the fisheries to augment their income.

The outfitting industry in Saskatchewan probably began in the southern part of the province in the 1920's catering to wealthy non-resident anglers. Outfitters moved northward, especially after the Second World War, and established lodges throughout the forested area. Initially most lodges could only be accessed by air but by 1981 more than half were accessible by road. In 1981, 76% of the lodges were located in Northern Saskatchewan and half of these were only accessible by air.

Almost all of the revenues generated by northern fly-in lodges were from package plans and accommodation services to anglers. In contrast, most of the revenue generated by southern drive-in lodges were retail services for general vacation activities. Northern drive-in lodges were intermediate but most of the services were for fishing activities.

In summary, the nature of the fishery has changed profoundly over the past 100 years. Initially it was a net fishery, mainly commercial, and essentially confined to southern Saskatchewan. Today it is primarily recreational, and it extends throughout the entire province. Most commercial fishing and outfitting occurs in the northern half of the province: in the south, commercial fishing is essentially confined to species other than game fish; in the north, game fish are important to net fishermen, outfitters and anglers.

Principal Problems and Policy Objectives

Principal Problems

The overharvesting experienced in northern Saskatchewan is the situation which drives the need for conservation. It results from a combination of two major problems: unrestricted access and overcapacity. Both are aspects of the supply—demand imbalance issue recognized by the Saskatchewan Fisheries Policy — Action Plan.

Fisheries in Saskatchewan have virtually unrestricted access. Harvesting is based on the "rule of capture": fish in a lake or stream are available to any user; all fishermen compete for a share of the supply and have no right to any fish until they have been landed. The resource is treated as a common property until caught. This can lead to increased numbers of fishermen which, in turn, creates poor economic performance, instability in the fishing industries and depletion of fish populations.

Overcapacity is caused by the increased demand for fish and by increased accessibility to lakes in northern Saskatchewan. The large number of lakes there — more than 88,000 — give rise to the impression that the resource is infinite. In fact all of the major lakes* and many minor ones now support one or more fisheries and expansion is being directed to lakes already being fished to capacity or to increasingly smaller and more remote lakes. Unlike most industries, expansion in fisheries occurs even when no additional production is possible, and as long as there are no barriers to expansion, the numbers of fishermen and outfitters will continue to grow. The available harvest and profits are spread more thinly among the users but their costs of operation are not. Conflicts become more aggravated and demands for additional resources more strident.

*Lakes in Saskatchewan have surface areas which range from about an acre to 1,996,800 acres (Lake Athabasca). There are 387 major lakes (i.e., lakes with surface areas greater than 2500 acres or 1000 hectares) and 87,939 minor lakes in Saskatchewan north of the 54th parallel. The major lakes have a combined surface area of 8.65 million acres and the minor lakes a combined surface area of 6.31 million acres. The average area of the major lakes is 22,353 acres and the minor lakes is 72 acres.

Policy Objectives

Each of the issues described in this paper has two or more options associated with it. Some options are mutually exclusive, that is, only one option can be implemented; others allow the implementation of two or more options. Each should be judged from the perspective of whether it meets the following fisheries management policy objectives:

1. **Conserve the resource.** The fish resource is the basis for the fisheries and must be conserved and protected because it is renewable, scarce and valuable. This means resource use must be optimized to enable the fish to maintain their abundance in perpetuity.

2. **Maximize the benefits of resource use.** This is the most difficult objective because it attempts to reconcile the differing uses of the resource. Anglers and commercial net fishermen use the same fish differently, and because of the common property nature of the resource, compete directly for them. The values generated by these uses are also different and require social, cultural and economic judgement to reconcile.

3. **Promote economic stability.** Commercial users of the resource need assurance that their incomes and their opportunities will not be diminished as a consequence of the increased demand for the resource.

4. **Protect social and cultural values.** Residents of northern Saskatchewan are dependent on the resource and must not be excluded from the fishery nor prevented from utilizing fish in beneficial ways.

5. **Be easy to administer.** The fisheries in northern Saskatchewan are spread over a vast area. Policies and regulations should facilitate supervision with minimal enforcement activity. Effective policies should also be administratively simple and in the interest of the users to support.

Issues and Options for the Commercial Net Fishery

The commercial fishing industry in Saskatchewan is a major user of the fish resource. In 1983-84, a total of 6.2 million lb of fish of all species were harvested worth $2.2 million. Game fish comprised half the harvest and 60% of the landed value. The industry employed an estimated 2145 people, of which 1015 were licenced fishermen, 1000 were helpers, and 100 were employed in collecting, handling and processing the fish. Another 30 persons may have been employed in transporting the fish in aircraft and trucks.

The principal issues to be addressed are highgrading, small mesh gill nets, seasons, improper use of nets and need for harvest information.

Highgrading

A. Situation

Highgrading means filling a commercial quota with the harvest of a single species of fish, such as walleye, because it fetches the best price. Commercial quotas which are not partitioned into species quotas may be filled with any or all of the species designated for harvest. Thus a quota which permits, say, a harvest of 10,000 kg of whitefish, pike, walleye and lake trout, means that the commercial harvest for the lake must not exceed 10,000 kg and that it may be comprised of one or more of the designated species.

A total of 821 lakes in Saskatchewan have commercial fishing quotas established.

The commercial quota is the basis for fisheries management because it is the allowable harvest of the economically important species by the commercial fishery at a lake.

Lake quotas can be partitioned into species quotas, which are the allowable harvests of individual species by the commercial fishery at a lake. Only 78 lakes have species quotas.

Quotas are established for the commercial fisheries but not for the recreational fisheries. The commercial fisheries are controlled, which means the harvests and quotas are monitored. Fisheries cease when the quotas are filled. Fishermen are licenced for each lake they fish and the transactions which occur when fish are sold form the basis for the monitoring process. The recreational fishery is not controlled on the same principle because it is open access. There are 150 times more anglers than commercial fishermen and an angling licence entitles a person to fish any lake. This open access means that the angling harvest can continue beyond that recommended for a lake.

B. Problems Associated With Highgrading

Highgrading is a form of overharvesting and has serious consequences for walleye stocks which are already hard pressed. Highgrading wastes other species of fish which are discarded in favor of the more valuable species. Walleye stocks in most lakes of the Churchill River basin are currently being overharvested because there are too many anglers and because commercial fishermen highgrade and use illegal mesh nets. Some stocks have already collapsed (e.g., Besnard, Canoe, Knee, Dipper, Primeau); others will collapse soon.

C. Options

Three options exist: (1) retain commercial quotas; (2) adopt species quotas; and (3) increase lake supervision.

1. **Retain commercial quotas.**

   Retaining commercial quotas means maintaining the current open quota system.

   a) Advantages

      1) Commercial fishermen benefit in the short term because of highgrading. Earnings to commercial fishermen, which are seldom high at the best of times, are maximal because they are based on larger catches of economically valuable fish.

      2) The current system is easy to administer because Conservation Officers are concerned about the total harvest from a lake rather than the harvest of each species.

   b) Disadvantages

      1) Commercial fishermen — and other fishermen too — will lose in the long term because of overharvesting.

2. **Adopt species quotas.**

   Commercial quotas can be partitioned into species quotas, which are the allowable harvests of individual species by the commercial fishery on a lake.

   a) Advantages

      1) Harvests would be within levels which should enable each species to sustain itself. Quotas for walleye on some lakes may have to be adjusted periodically to permit their populations to rebuild.

   b) Disadvantages

      1) Species quotas mean reduced incomes for fishermen.

      2) Increased supervision will be required to ensure that the quotas for the various species are not exceeded.

3. **Increase lake supervision.**

   Regulations currently exist to prevent waste of fish thus increased supervision on the lakes could prevent such actions.

   a) Advantages

      1) Wastage of fish would be eliminated or reduced according to the amount of supervision provided.

   b) Disadvantage

      1) A large staff would be required to adequately address this problem.

Small Mesh Gill Nets

A. Situation

Small mesh nets are gill nets whose meshes are less than that legally sanctioned for any lake. Five or 5 1/2-inch (i.e., 12.7 or 14.0 cm) mesh nets are permitted in most Saskatchewan lakes. Smaller nets are permitted in some lakes to meet special local circumstances.

The size of gill net meshes permitted in a fishery are based on the following: to allow small immature fish to escape; to catch fish which have spawned at least once; to catch fish which are rapidly gaining weight. Ideally, each species requires a different mesh size (whitefish require a larger mesh than walleye). For purposes of conservation and enforcement however, only one mesh size is permitted in a lake and only one mesh size can be used in an area with a large number of lakes. The larger mesh sizes are selected to provide maximum conservation to all species.

Small mesh gill nets were introduced into northern Saskatchewan in the 1950's to enable fur farm fishermen to catch ciscoes for mink food. These nets caught other species as well as ciscoes and it is probable that they caught greater numbers of the preferred species than could be attained by the legal mesh. Commercial fishermen began to adopt the gear of the fur farm fishermen. Few fur farm fishermen remain today but the problem of small mesh nets not only remains but is becoming widespread.

B. Problems Associated With Small Mesh Gill Nets

The use of small mesh gill nets is a serious management problem. Stocks of fish in many of the lakes in which the gear has been used for years are at or nearing the point of collapse. Fish such as walleye are being cropped before they have had an opportunity to spawn, as well as before they have had an opportunity to reach the point of rapid growth and weight gain.

Small mesh gill nets are not a problem throughout all of northern Saskatchewan but are a problem primarily around the communities of Cole Bay, Canoe Narrows, Jans Bay, Buffalo Narrows, Dillon, Ile-a-la-Crosse, Patuanak and Pinehouse.

Enforcement is difficult because:

a) there are too many lakes in too large an area to monitor and effectively enforce the regulations;

b) nets are not easily found; they are set late at night, lifted early in the morning and hidden during the day;

c) nets are unmarked and ownership cannot be proven;

d) owners of illegal nets are seldom caught; helpers often accept the blame for the owners if caught lifting small mesh nets;

e) the level of penalties imposed by the courts have not been a deterrent;

f) the cost of a small mesh net can be recovered from a few lifts; and

g) confiscated nets are easily replaced.

C. Options

Seven options exist:

(1) attack the problem on an individual lake basis;

(2) restrict the sale and purchase of small walleye;

(3) restrict the number of lakes open to commercial fishing in an area at any one time;

(4) impose severe penalties or suspend fishing privileges to convicted fishermen;

(5) close lakes to commercial fishing where the use of small mesh nets persists;

(6) prohibit the sale and purchase of small mesh nets;

(7) educate commercial fishermen.

1. Attack the problem on an individual lake basis.

This is the current situation. There is no overall concerted approach to resolving the problem. The effort is dependent on the activities of individual Conservation Officers who are essentially limited to searching for and seizing illegal nets while the nets are in the water.

a) Advantages

1) Commercial fishermen benefit in the short term because there is a market for walleye.

b) Disadvantages

1) A great deal of enforcement effort is expended in this work with few tangible results.

2) The present approach has not resolved the problem.

2. Restrict the sale and purchase of small walleye.

Currently all sizes of walleye can be marketed. This option would make walleye less than 0.6 kg round weight illegal for sale.

a) Advantages

1) Harvests of small walleye should decline markedly from lakes where small mesh nets are known to be used and walleye stocks should rebuild provided mesh sizes were not reduced and enforcement was effective.

2) This option could be easily enforced because it relates the catch to the owner of the fish.

b) Disadvantages

1) A demand for small walleye exists in the market place. A black market in these fish could develop.

2) Legal nets can take some small walleye thus allowances would have to be made for some small fish to be sold. Each lake may require different tolerances.

3) Walleye stocks will take some time to rebuild and the social implications of reduced incomes will create demands for access to other lakes and/or resources or for legalizing smaller nets.

4) Harvests of small walleye from problem lakes may be assigned to non-problem lakes. Diligent enforcement will be required to ensure compliance.

5) Fishermen may discard small walleye to avoid prosecution.

6) The province currently does not have the legal authority to restrict sale of small fish.

3. **Restrict the number of lakes open to commercial fishing in an area at any one time.**

Enforcement is difficult in areas with large numbers of lakes. The Ile-a-la-Crosse District, for example, has 47 commercially fished lakes, many of which are fished simultaneously. Not only can small mesh nets be used freely but harvests from one lake can be attributed to that of another. This option will not resolve small mesh net problems by itself but it will facilitate enforcement by restricting the number of lakes open to fishing in an area at one time. The option requires the co-operation of local fishermen and their consultation to determine how and when lakes can best be fished.

a) Advantages

1) The fewer the lakes being fished the more effective enforcement could be. In combination with option #2, it can be used to ensure that lakes with the same mesh size are open at the same time to reduce the possibility of fish being harvested from one lake and being declared as production from another.

2) More effective scheduling through the consultative co-operative approach can benefit plants and carriers by assuring supplies of fish and reducing their costs of operation.

b) Disadvantages

1) Northern fishermen like to exercise discretion about their fishing activities. In areas with large numbers of lakes such restrictions may not be welcome.

2) Some disruption of fishing activity may initially occur with resultant production and market interruptions.

4. **Impose severe penalties or suspend fishing privileges to convicted fishermen.**

Heavy mandatory fines or suspension of fishing privileges for fishermen convicted of using small mesh nets or delivering too many small fish would make them aware of the seriousness of the infraction. The suspension could be for all lakes fished by the convicted individual or only for the lake on which the conviction occurred. It could also include withdrawal of programming support provided by the Province. This option will not curb the use of small mesh nets by itself but would be more effective if applied in combination with options #2 and #3.

a) Advantages

1) The increased deterrent may reduce the incidence of the problem.

b) Disadvantages

1) Removal of fishing privileges could jeopardize the livelihood of convicted fishermen. This might be deemed excessively harsh punishment, particularly for fishermen who employ helpers. The livelihood of both the fisherman and his helpers would be jeopardized, thus penalizing the innocent along with the guilty.

5. **Close lakes to commercial fishing where the use of small mesh nets persists.**

Suspension of fishing privileges for a year for all fishermen on lakes where small mesh nets were found would make fishermen aware of the seriousness of the problem.

a) Advantages

1) Cessation of fishing would benefit fish populations depending on the length of closure.

2) Fishermen may police themselves to prevent loss of privileges and income.

b) Disadvantages

1) This option penalizes the innocent along with the guilty.

2) Some fishermen may be willing to risk the closure of a lake by continuing to use small mesh nets.

3) Outside interests could instigate closures by placing small mesh nets in the lake.

6. **Prohibit the manufacture, sale and/or purchase of small mesh nets.**

The province cannot restrict interprovincial trade and commerce and therefore this option is not viable.

Many fishermen in Saskatchewan and elsewhere have legitimate need for small mesh nets and they will continue to be manufactured.

7. **Educate commercial fishermen.**

Education is important and may help in the long term. However most fishermen realize the problems created by using small mesh nets.

a) Advantages

1) Better educated fishermen may respond by policing themselves.

b) Disadvantages

1) In spite of education some fishermen may still use illegal gear for greater economic gain in the short run. The resource could be lost or the damage irreversible before the benefits of better education apply.

Seasons

A. Situation

Under the Sport Fish Conservation Program, which took effect May 4, 1985, the province was divided into Northern, Central and Southern Zones to provide special attention to the heavily fished waters in central Saskatchewan, and provide additional protection for slower growing, later spawning fish in northern Saskatchewan.

Angling opening dates are staggered to provide protection for spawning walleye. In 1986, for example, the opening dates are as follows: Southern Zone, May 3; Central Zone, May 17; and Northern Zone, June 1.

The commercial fisheries in northern Saskatchewan currently open when the lakes become ice free. The question is whether the commercial fishery should continue to do this or be governed by the seasons established for the recreational fishery.

Angling will close in all three zones March 31 each year.

Some commercial fishermen save their quota for late March and early April when higher fish prices are possible. In some cases this would allow net fishing after the angling season closes.

B. Problems Associated With Seasons

Adoption of the sport fishing opening dates will have some impact on the commercial fishery.

a) Lakes in the Northern Zone could be affected if the commercial fishery was delayed until June 1 each year. During the years 1981-82, 1982-83 and 1983-84, up to 5 lakes were fished during May and about 5600 lb of fish of all species were harvested.

b) Lakes in the southern portion of the new Central Zone could also be affected if the commercial fishery were delayed until about May 24 each year. During the past three years, 2-3 lakes were fished each year between May 1 and May 24, and about 17,000 lb of all species of fish were harvested.

A March 31 closing date would have a greater impact on the commercial fishery because some high value production will be lost.

a) The average harvest of all species of fish for the period April 1-15 from northern Saskatchewan lakes for the years 1981-82, 1982-83 and 1983-84 was 155,000 lb. This harvest came from 39-45 lakes each year, 74% of which were in the Central Zone. The harvest represents 8.5% of the northern winter harvest and 2% of the annual provincial harvest.

b) The average walleye harvest during the period April 1-15 for the three years noted above was 33,500 lb. This represents 15% of the walleye harvested during the winter season. The walleye were harvested from 28-37 lakes each year.

C. Options

Options exist for both the opening and closing dates: (1) commence fishing when the lakes are ice free; (2) adopt the sport fishery opening dates; (3) cease fishing April 15; and (4) cease fishing March 31.

1. Commence fishing when the lakes are ice free.

This is the current situation for the commercial fishery in northern Saskatchewan.

a) Advantages

1) There are no conservation advantages to this option because walleye usually spawn shortly after the ice breaks up in lakes.

b) Disadvantages

1) Lack of a uniform regulation affecting both users of the resource equally would be most apparent in the years when lakes became ice free before the angling seasons opened allowing commercial fishermen to begin fishing first. Under such circumstances sport fishermen would be perceived to bear the greatest portion of the conservation closure.

2) An economic advantage may exist in that early seasons may provide access to good fish prices.

2. Adopt the sport fishery opening dates.

Adopting the sport fishery opening dates means that commercial fishing would commence the third week of May in the Central Zone, and June 1 in the Northern Zone. In the southern area net fishing is restricted to the late fall or early winter; no commercial fishing occurs in the spring.

a) Advantages

1) Walleye populations in lakes of the Churchill River basin will benefit from the additional protection conferred by the later opening dates.

2) All users of the fish resource would adhere to the same opening dates.

b) Disadvantages

1) Some commercial fishermen could lose an important portion of their income in the spring. This would not occur every year but only when the lakes became ice free before the opening dates.

3. Cease fishing April 15.

This is the current situation for the commercial fishery in northern Saskatchewan.

a) Advantages

1) Commercial fishermen would continue to benefit because an important portion of the winter harvest is taken during the period between the end of March and the middle of April. Fish prices are frequently highest and fishermen benefit accordingly.

b) Disadvantages

1) Failure to close the net fishery on March 31 will cause ill feelings among anglers who are the principal users of the resource in Saskatchewan.

4. Cease fishing March 31.

Sport fishing ceases March 31 each year.

a) Advantages

1) Walleye populations will benefit from the additional protection conferred by the earlier closing date.

2) All users of the fish resource would adhere to the same closing date.

b) Disadvantages

1) Some commercial fishermen will lose an important portion of their income, especially for walleye, if fishing must cease March 31 each year.

Improper Use of Nets

A. Situation

Current regulations require commercial fishermen to lift their nets every 48 hours.

Fish are wasted when commercial fishermen fail to lift their nets regularly.

B. Problems Associated with Improper Use of Nets

Fish which have been dead for several days in untended gill nets are a source for complaints about commercial fishermen.

Fish resources are scarce, have considerable economic value, attract large numbers of visitors to the province, are an important item of commerce, and cost considerable amounts of public monies to manage. They should therefore be used in beneficial ways.

Fishermen who fail to tend their nets properly waste fish and show a lack of respect for the resource and other users. It enhances an irresponsible image of net fishermen in the eyes of the public and sports fishermen.

Fish discarded on the lake are not recorded against the commercial quota and are a source of overharvest.

C. Options

Three options exist: (1) maintain current enforcement practices; (2) educate fishermen who waste fish; and (3) penalize fishermen who waste fish, through improper use of nets.

1. **Maintain current enforcement practices.**
   a) Advantages
      1) There are no advantages to this option.
   b) Disadvantages
      1) Wasted fish are an unnecessary drain on a scarce resource.
      2) Fishermen lose because they cannot sell the fish. The province and the fishermen lose because of the poor image created in the eyes of anglers.

2. **Educate fishermen who waste fish.**
   a) Advantages
      1) Quality of fish harvested could improve if fishermen understood the problems created by such fish wastage.
   b) Disadvantages
      1) Because education would be voluntary, there is no compulsion to take better care of their nets and their fish and no penalties for failure to do so.

3. **Penalize fishermen who waste fish through improper use of nets.**

   Fishermen who waste fish by failing to take proper care of their nets would be warned initially by Resource Officers. Those who continue to waste fish could have their commercial fishing privileges rescinded for up to one year.
   a) Advantages
      1) Quality of fish and incomes to fishermen would improve.
      2) The image of commercial fishing would improve.
      3) An unnecessary loss of the fish resource would disappear.
   b) Disadvantages
      1) Penalized fishermen could lose their income from fishing for up to one year.

Need for Harvest Information

A. Situation

The commercial fishing industry provides information on a large proportion of its resource utilization through its sales transactions. Saskatchewan fishermen have two outlets for the sale of their fish: local consumers and the Freshwater Fish Marketing Corporation (FFMC).

Most of the commercial harvest is bought by FFMC. Data are supplied to the Department for fish purchased and includes the names of fishermen, lakes fished and species and weight delivered. These data provide the basis for subsidy payments and departmental harvest records.

Fish are also sold by fishermen to consumers within the province. The Department is developing legislation to facilitate these activities. Current sales are about 4% of that sold to the FFMC but could increase in future.

B. Problems Associated with a Lack of Harvest Information

Fishermen selling fish to other than the FFMC have no obligation to report harvest or sale information.

Unreported harvest results in fishery managers being unaware of lakes fished and harvests taken. This leads to underestimates of harvests and overproduction. This, in turn, leads to conflicts among users, excessive fishing activity and loss of the resource.

C. Options

Two options exist: (1) provide no data; and (2) provide data.

1. Provide no data.

This is the current situation.

a) Advantages

1) There are no advantages to this option.

b) Disadvantages

1) The lack of data undermines the Department's ability to manage the resource because the magnitude of the harvests are unknown.

2) The lack of data affects commercial fishermen. Underestimated harvests for local sales and full quota harvests for FFMC sales mean the total commercial harvests are over quota. This overharvesting can be serious depending on the numbers of other fishermen and their harvests. Sooner or later the fish will become fewer in number, smaller in size and less valuable.

2. Provide data.

This option means that commercial fishermen who sell their fish within Saskatchewan must provide harvest, sales and shipping data. Harvest data would include name of fisherman as well as lake, date, species and weight caught; sales data would include the names of the dealer and the fisherman as well as date, species and weight purchased. Individuals transporting fish must provide information on the name(s) of the fishermen shipping the fish as well as the species and weight being transported.

a) Advantages

1) Fishermen, consumers and the Department will benefit from these data. Fishermen will know that the resource is not being overharvested; consumers will know who sold the fish; and the Department will know how much fish are being harvested, where they were sold and what quality were sold.

b) Disadvantages

1) Disadvantages are associated with the Department's inability to verify the data being supplied. Provision of accurate data must be a condition of the licence and the records must be subject to periodic audits by Conservation Officers.

Summary of Commercial Net Fishery Issues and Options

Issues	Options
Highgrading	1. retain commercial quotas 2. adopt species quotas for individual lakes 3. increase lake supervision
Small mesh gill nets	1. attack the problem on an individual basis 2. restrict the sale and purchase of small walleye 3. restrict the number of lakes open to commercial fishing in an area at any one time 4. impose severe penalties or suspend fishing privileges to convicted fishermen 5. close lakes to commercial fishing where the use of small mesh nets persist 6. prohibit the sale and purchase of small mesh nets 7. educate commercial fishermen
Seasons	1. commence fishing when the lakes are ice free 2. adopt the sport fishery opening dates 3. cease fishing April 15 4. cease fishing March 31
Improper use of nets	1. maintain the current enforcement practices 2. educate fishermen who waste fish 3. penalize fishermen who waste fish
Need for harvest information	1. provide no data 2. provide data

Issues and Options for the Commercial Outfitting Fishery

The outfitting industry in Saskatchewan represents a major commercial user of the fish resource. In 1981, there were 180 establishments with a capacity of 5499 beds, which served 84,931 guests for a total of 368,410 guest-days, 70% of which were attributed to fishing and hunting activities. The amount of game fish harvested by these guests is unknown but it could have been as much as one million lb or more.

The principal issues to be addressed are lodge capacity guidelines and incomplete harvest information. The Northern Saskatchewan Outfitters Association would like the guidelines for lodge capacities removed because they restrict the use of the fish resource by the clients of individual outfitters.

Lodge Capacity Guidelines

A. Situation

Lodge capacity guidelines attempt to protect both existing outfitters and the fish resource from excess capacity and undue competition for a limited resource. The fish resource is finite and cannot be increased. If the number of users increases, the amount of fish received by each must be decreased or the resource will diminish and collapse from overharvesting.

The guidelines:

a) estimate the sustainable supply of game fish in lakes;

b) estimate the potential harvest of game fish by guests of outfitters;

c) relate this harvest to that of other users and to sustainable supplies; and,

d) determine the maximum guest capacity of an establishment in terms of the number of beds to keep the harvests within the sustainable supplies.

Prior to the late 1970's outfitters were subject to few restrictions on the sizes of their establishments or on the places where lodges could be established.

The guidelines were introduced in 1978 in conjunction with land use activities in northern Saskatchewan. They are applied annually through the outfitters lease.

Similar guidelines are used in Manitoba and Ontario.

A recent study of the outfitting industry in Saskatchewan by Canada Fisheries and Oceans indicated it has excess capacity. In 1981, outfitters only used about 40% of their bed capacity and their financial performance was poor, and as a result the industry's financial position was one of high risk and uncertainty. In 1985, outfitters experienced 5-10% increase in numbers of guests over previous years. Thus additional capacity will not improve financial performance but will cause stocks of fish to decline, conflicts among fishermen and outfitters to increase, and demands for additional resources will become more insistent.

B. Problems Associated with Lodge Capacities

The principal problem is the restrictive nature of the guidelines which can prevent expansion of private businesses. Some outfitters see private business as being the best judge of where and what size of outfitting establishment is warranted. Unfortunately such decisions seldom consider the availability of the resource or the needs of other users.

There is a view the guidelines may serve to protect existing businesses from healthy new competition.

The guidelines do not accommodate changing recreational activities of people because they assume all guests fish. Until recently this was correct but there are increasing numbers of non-fishermen among the guests of road accessible lodges. Northern fly-in lodges, on the other hand, will probably always cater exclusively to anglers.

The guidelines do not accommodate changing access to the resource. When roads are developed into lakes anglers who do not use lodges increase or new commercial fisheries may develop. The harvests from the new users can become as large or larger than the existing users and as a consequence, influence the economic performance of existing outfitters.

Many outfitters believe the guidelines do not allow for additional guest capacity during the prime fishing seasons. Thus an average seasonal capacity of 40% means 100% of capacity during the prime season. Increases in capacity that may be permitted would result in increased harvest during the peak season and increased excess capacity in the off-season, unless, of course, the outfitter caters to other recreational interests. The guidelines are simply the best estimates for an average situation. They are applied uniformly and cannot accommodate individual situations because this may be perceived to benefit some lakes/ lodges more than others.

A problem also exists that the guidelines are applied as a function of the land lease. If the land is purchased no control over the size of development exists.

Under the present system there is no penalty for non-compliance to the guidelines.

C. Options

Six options exist: (1) remove the guidelines; (2) control bed capacity; (3) control annual guest capacity; (4) implement a quota system; (5) implement leased fishing rights; and (6) adopt reduced limits for some lakes.

1. Remove the guidelines.

a) Advantages

1) This would remove the criticism that government is controlling private business.

2) Outfitters may benefit initially by increasing the resale value of their property through expanded capacity. This however is a short-term advantage because the fish resource will not withstand the increased harvest.

3) This could allow additional outfitters to become established. Many of the requests currently being received for new outfitting establishments are directed to lakes where outfitters already exist, to lakes with commercial net fisheries and to lakes where insufficient fish exist to support viable operations. As in (2) above the advantages are short term.

b) Disadvantages

1) Removing the guidelines will allow the industry to expand without regard for the resource or for other users. This means that lodges could be established anywhere and become as large as desired. Established lodges would lose the protection provided by the current policy.

2) Overdevelopment could also mean that outfitters may not be able to continue to provide high quality services with the result that the image of the industry will suffer.

3) Property values will decrease either because stocks of fish become depleted or because new outfitters wish to build new camps rather than purchase the established ones.

4) Stocks of fish will decline, conflicts among the users will increase, and demands for additional stocks of fish and industry support will become more insistent. Clients will go elsewhere seeking better angling quality.

2. Control bed capacity.

Control of bed capacity means that the number of guests at any one time is determined by the number of beds at each lodge. Capacity is based on three assumptions: that each guest fishes; that each guest catches and retains the limit; and that the lodge operates at 60% capacity for the season. This option is used by the Department for new lodges that may be developed.

a) Advantages

1) This option ensures that development of the industry is controlled and orderly. Property values are retained because there is no undue proliferation of outfitting establishments.

2) Controlling bed capacity works to protect outfitters by ensuring that harvests do not exceed sustainable supplies.

3) Supervision is simple because it is based on the number of beds in each establishment.

b) Disadvantages

1) The controls are indirect (i.e., on the number of beds rather than on the harvest), and this coupled with a lack of information about numbers of guests and their harvests of fish, means the controls are based on assumptions rather than facts.

2) This option appears to interfere with business operations by preventing expansion into the market of non-consumptive users. Yet with the industry functioning at 40% of capacity potential exists through better marketing efforts during the low occupancy periods to increase numbers of guests without increasing the size of their establishments.

3) The effectiveness of this option is limited where competition exists from anglers who do not utilize lodges. Fishing quality deteriorates as a result of unrestricted access and the outfitters' investment deteriorates.

3. Control annual guest capacity.

This is a variant of option #2 except that instead of controlling the number of guests who may be present at any one time, the control is over the total number of guests in a year. This option is employed by the Department for established lodges.

a) Advantages

1) This option allows each outfitter some flexibility in allocating guests over a year.

b) Disadvantages

1) Although this option allows flexibility in the seasonal allocation of guests it places a ceiling on the size of each establishment. The maximum capacity is still based on the assumption that all guests fish and gives credence to the criticism that it prevents expansion into the non-consumptive market.

2) Supervision is difficult because it is after the fact. This means that enforcement must be delayed until the end of the season when the total number of guests may be determined.

3) There are no penalties to prevent an outfitter from expanding beyond his authorized capacity as the controls are not supported by legislation.

4) The option is open to abuse because it is dependent on three things: a complete and correct guest register maintained by each outfitter; an independent means of verifying the accuracy of the registers; and an independent means of monitoring the harvests. Given the limitations in staffing, checking guest registers and harvests are beyond the Department's capability.

4. Implement a quota system.

The commercial net fishery is currently managed on the basis of quotas which indicate the allowable harvests by species and lake. Outfitters are also commercial users of the resource and could be allocated quotas. Quotas could be derived for each lodge to indicate the allowable harvests by lake, species and lodge.

A problem with a quota system is the provision and verification of harvest data. One solution might be to issue invoices to guests for fish caught and retained. Tags could also be required to mark fish caught by guests. Outfitters with untagged fish and guests with fish and no receipts would be subject to penalties.

a) Advantages

1) Lodge quotas might stimulate outfitters to become more involved in resource management. By establishing individual lodge angling limits an outfitter could determine the best method of utilizing the resource available to improve the financial performance of his operation.

2) Quotas would allow each lodge reasonable flexibility regarding the allocation of the fishing effort and harvests of its guests. The numbers of guests would be dependent on harvest limits imposed by the lodge: more guests could be accommodated by lodges which permitted each angler to keep only one or two fish for his/her stay regardless of duration.

3) Lodge quotas focus attention on the harvest, not on the number of guests and consequently represent the least government intervention.

4) The lack of restriction on guests means that outfitters could service the non-consumptive marketplace.

5) The harvest records provided by outfitters would represent invaluable data on resource utilization that are not now available.

b) Disadvantages

1) This option requires monitoring harvests and effective enforcement to ensure quotas are not exceeded.

2) Lodge quotas (and net fishery quotas) do not address the harvest by itinerant anglers and may not be suitable for open access lakes. The harvest by these anglers must be estimated and the remainder of the allowable harvest allocated to the outfitters and commercial fishermen. The itinerant angler harvest must be monitored periodically to ensure that the total allowable harvest is not excessive.

3) Quotas are subject to periodic review and adjustment. This means that they could be reduced if harvests by itinerant anglers increased.

4) The provision of harvest data will require additional costs and bookkeeping for outfitters and government.

5. **Implement leased fishing rights.**

Leased fishing rights are a variant of option #4 except that they allocate land and fish resources with the lease or outfitting licence specifying terms and conditions including lakes fished, species, quotas, rents and harvest reporting requirements. Other public resources, such as forests, minerals and petroleum, are effectively managed by this system. Leases allow outfitters to utilize the resource but they do not guarantee its abundance. Leases would be granted possibly by auction for extended periods of time, say 20 years; rights would be based on allocation of the allowable harvest.

a) Advantages

1) A price system rations scarce resources to those who value them, provides discipline to guide investment and allocation decisions, and provides a means of recovering the costs of resource management as well as a resource rent to the owners of the resource.

b) Disadvantages

1) A price system concept is a marked departure from the present open access tradition and may be seen as an objectionable privatization of the resource.

2) A system of leased fishing rights is contrary to the province's current policy of multiple use by all parts of society because it imputes exclusive rights to one user group. Such exclusive rights could exacerbate conflicts with other users, especially native commercial fishermen and cottage owners.

3) Granting fishing rights might also imply that the lease holder has certain rights, such as, the right to earn a living from the resource, the right to have better enforcement, and an improved supply of fish. The Department cannot guarantee these rights.

4) A price system would be unfair if applied only to outfitters and not to anglers and commercial fishermen.

5) Problems could arise when leases are renewed if outfitters with established camps and operations are outbid. The established operators could lose their equities in their buildings and properties as well as their rights to the fishery.

6) Some individuals and/or organizations could effectively control the resource in a lake or lakes by outbidding the established operators and acquiring their leases, which could result in the establishment of monopolies. The increased revenues may benefit the Crown but not current users of the resource.

6. **Adopt reduced limits for some lakes.**

Reduced limits are a special status and appear to be only suitable for fly-in lakes where access is controlled and where outfitters wish to increase their capacities and maintain quality fishing. They may not be suitable for open access lakes or lakes with large active commercial fisheries. This option can operate with other options. It emphasizes a "catch and release" policy: anglers can catch as many fish as they wish but they may only keep a very limited number of each species. Thus anglers can experience excellent fishing while conserving the resource. This option is operational in Manitoba and is generally accepted and endorsed by lodge operators there.

a) Advantages

1) The principal advantage is to outfitters at remote lakes which have not been heavily fished because it enables them to increase their capacities without increasing their harvests. The emphasis is on quality rather than quantity fishing.

2) Reduced daily and possession limits for selected lakes would indicate support for both conservation and development.

3) The option is self-enforcing because enforcement is applied by outfitters wishing to maintain quality fishing and Departmental supervision would be minimal.

b) Disadvantages

1) This option will not work at lakes with uncontrolled access which have large numbers of itinerant anglers.

2) Mortality from fish hooks caught in the mouths and gill arches or from improperly handled fish could be serious. This may be reduced however by using barbless hooks and by handling fish with care.

3) Harvest data would be required from outfitters at special status lakes as well as an independent means of monitoring these to ensure that the special status was not being abused.

Lack of Harvest Information

A. Situation

The outfitting industry is unique among commercial resource users: it is a major commercial user of game fish yet provides almost no information about its utilization of the resource on which it is dependent. There is no legal obligation requiring outfitters to report harvests; Fisheries Branch has requested harvest data from outfitters annually since 1979 but few have co-operated.

The fish resource is owned by the public. The resource costs money to manage and administer. If the resource is not utilized correctly, additional public monies are required to enhance and restore it. The public therefore has a right to know how these monies are spent and why. They also have a right to know how the resources are being utilized and they require that the resource be utilized in a way which will enable the fish to maintain their abundance in perpetuity.

Information on harvests and fish populations is essential to fisheries management. Fish populations are dynamic and change continually in response to harvest, environment, predation, disease, competition, abundance of their food supply, etc. Harvest is the most important factor for walleye and lake trout, species for which the demand exceeds supply. Excessive harvests can reduce the ability of populations to reproduce and replace themselves, which, in turn, can cause them to collapse and virtually disappear.

Information on harvests is critical for many Saskatchewan lakes because of their increased accessibility, the large numbers of fishermen who use them, and the large harvests of game fish. Harvests of walleye and pike are excessive in many lakes in the Churchill River basin and harvests of lake trout are excessive in many lakes of the Mackenzie River basin. Although the information is invaluable, the Department is unable to collect it because there is insufficient staff to monitor operations at 180 camps scattered throughout northern Saskatchewan.

B. Problems Associated with a Lack of Information

The principal problem for the department is a lack of comprehensive data about lakes fished and harvests taken. This lack of knowledge leads to conflicts among outfitters competing for fish in the same lakes. This is most apparent for outfitters with established camps who compete with outfitters using the same lakes on a day-use basis. Conflicts also occur when commercial net fishermen utilize the same lakes. This demonstrates the inability of resource managers to control and re-direct fishing activities and prevent conflicts from arising.

Outfitters want to protect and increase their share of the harvests and believe the data are not used in their best interests. The data are not used "against" outfitters, or any other resource users; they are used to refine estimates of harvest and the effects of fishing. Thus the data are used to conserve the fish and protect the fisheries.

C. Options

Two options exist: (1) provide no data; and (2) require data to be provided.

1. Provide no data.

This is the current situation.

a) Advantages

1) Because the request for data is seen as an unnecessary interference in business operations, outfitters benefit in the short term by not taking time to complete the documents.

b) Disadvantages

1) The lack of data undermines the Department's ability to manage the resource and the fisheries because it does not know which lakes are being utilized nor the magnitude of the harvests. Neither the resource nor the fisheries can be managed effectively.

2) The lack of data also affects the operations of outfitters. Not knowing the status of the resource in the lakes utilized by outfitters is comparable to driving a car without a fuel gauge. Exploitation is based on the maximum possible in the short term. Long-term decisions are not possible because the status of the resource is unknown. Competition is unwelcome not only because a perceived share is subdivided but also because the resource will diminish more rapidly than before.

2. Require data to be provided.

It should be understood that the provision of data by an outfitter is an obligation to be fulfilled in return for the privilege of making commercial use of the fish resource. Two kinds of data may be provided: guest data and harvest data. Guest data are the minimum necessary and include the number of guests fishing each lake utilized by the lodge each month. Harvest data are most useful but could be optional because they may be difficult to determine. If provided, they must include catches by species, month, and lake. If not provided, they must be estimated from the guest data which assumes that each guest fishes and takes the possession limit. If quotas are allocated to the lodges, harvest data become mandatory because lodges which cater to non-consumptive users would be penalized by the harvest estimation assumptions.

a) Advantages

1) Both the Department and outfitters benefit from information on the fisheries. Both would know which lakes are being fished, who is fishing them and how much fish are being harvested. The Department could then allocate fisheries without causing conflict.

b) Disadvantages

1) Disadvantages are associated with the Department's inability to immediately verify the data supplied. Provision of accurate data must be a condition of the licence and the guest registers and/or harvest log books should be subject to periodic audits by Conservation Officers.

2) Harvest data are virtually impossible to verify unless there is a departmental observer located at each camp to check the daily landings. Tags could be issued to outfitters by the Department as described in the lodge capacity guidelines above to ensure that regulations are being fulfilled. Intensive creel censuses could assess stock status periodically but they are not useful for verifying data on quota reports. They can indicate whether the abundance of game fish in a lake has declined but they cannot indicate which fishery or which lodge was responsible. Moreover creel censuses are after the fact, perhaps several years after the fact given the small number of staff, and have no enforcement value.

Summary of Commercial Outfitting Fishery Issues and Options

Issues	Options
Lodge capacity guidelines	1. remove guidelines 2. control bed capacity 3. control annual guest capacity 4. implement a quota system 5. implement leased fishing rights 6. adopt reduced limits for some lakes
Lack of harvest information	1. provide no data 2. required data to be provided

Conclusion

The fish resource of Saskatchewan has played an important role in the province's history. Residents and visitors alike have come to expect the variety and quality of fishing in the province's lakes and streams. But the last decade has seen the demand for fish increase while the supply has declined. No longer can the fish resource be taken for granted, and with increased demand, it is increasingly evident that the resource must be carefully managed to ensure an abundant supply for future generations to enjoy.

This document is the third in a series of discussion papers dealing with issues concerning the availability and use of Saskatchewan's fish resource in the 1980's. It seeks public input in the development of appropriate conservation and management plans to meet these issues. Previous papers were directed to goals and strategies for fisheries management and to options for sport fish conservation.

The purpose of this document has been to describe some options to ensure an optimal supply of fish to meet the needs of the commercial users. They have a special need to conserve and protect the resource because they depend on it for their livelihood.

Resource management is a public trust and input from the public is required to ensure the process reflects the needs and wants of Saskatchewan people. The material in this document is for public review, discussion and comment. Following receipt of such comment, management strategies and the appropriate legislation and policy will be developed for implementation in 1986.